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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,691	07/22/2002	Andre Eriksen	45900-000728/US	5550
30593	7590	01/21/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			DATSKOVSKIY, MICHAEL V	
			ART UNIT	PAPER NUMBER
			2835	

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/089,691

**Applicant(s)**

ERIKSEN ET AL.

**Examiner**

Michael V Datskovskiy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-9, 17, 18, 21-29 and 31-39 is/are rejected.
- 7) ☐ Claim(s) 10-16, 19, 20 and 30, 40 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04/03/2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Overlooked preliminary amended claims 1-41 are noted and will be prosecuted on the merit. However, to finally clarify claimed subject matters, examiner request applicant to provide a full consistent set of claims, as they stay after all amendments before a prosecution.
2. In the arguments regarding the independent claim 42 applicant rightly indicated two possible reasons for the restriction of the claims. Examiner agrees that the prior art search for this claim would not place on him an undue burden (See included pertinent prior art relevant to claim 42, in case of its further prosecution). However, claim 42 as being equivalent to the previously restricted claim 30, claims principally different structure, which is used for different purposes. Structure claimed in claims 1-41 does not have to be used together with the structure claimed in the claim 42, and vice versa.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore: the other spring members (claim 16); and the frame with the compressor and the condenser capable of being displaced in and out of built in shafts on the front side of a computer cabinet (claims 24, 25) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 24-25 and 34-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims claim a computer system according to claims 1 (claims 24-25) and 9 (claims 34-35), wherein the frame with the compressor and the condenser is capable of being displaced in and out of built in shafts on the front side of a computer cabinet. Although such structure is mentioned in the description, as possible, there is no support for such a structure in the drawings.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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7. Claims 26, 28, 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 26, 28 and 29 recite the limitation "the box". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-4, 22-23, 27 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chrysler et al.

Chrysler et al teach a computer system, Figs.1-13, comprising a cooling system, said cooling system comprising inside a computer casing: a processing unit 151; a separate, replaceable heat exchanger 150 in thermal contact with said processing unit 151; a compressor 101; first and second disconnectable pipes 606, 607 for transporting cooling refrigerant to and from the compressor to and from the heat exchanger 151; and a hardware regulating means, Fig.3, for regulating start and stop of the cooling system and also for regulating a speed of a compressor (col. 8, lines 11-49). Chrysler et al do not teach said compressor being a low-voltage compressor with a voltage usage below

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the voltage of the public power distribution network, particularly in the range from 6V to 48V, preferably 6V to 12V, mostly 12V. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose such compressor, since applicant did not describe any specific compressor structure and it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Regarding to the claim 31: Official notes is taken, that it is well known in the art to make heat exchangers from copper.

10. Claims 5-8, 26, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chrysler et al as applied to claims 1-4 above, and further in view of Wall et al.

Chrysler et al teach all the limitations of the claims except said processing unit comprising a base plate having legging extending parallel outwards from said base plate, said legging being extending through openings in a slot mounted on a motherboard (claim 5); said processing unit and said heat exchanger are enclosed a box, wherein an insulation material is provided between said box and said heat exchanger (claims 6-7); and there is a heating element in contact inside or outside the box, said heating element consisting of resisting wires for a heating inside or outside said box. Wall et al teach a cryogenic computer cooling system, Figs. 1-7, comprising a processing unit 42 comprising a base plate 44 having legging 43 extending parallel outwards from said base plate, said legging being extending through openings in a slot

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31 mounted on a motherboard; said processing unit and a heat exchanger 56 are enclosed a plastic box comprising a plurality of parts: 50, 47 and 47, wherein an insulation material is provided between said box and said heat exchanger; and there is a heating element 28 in contact inside or outside the box, said heating element consisting of resisting wires for a heating inside said box. It would have been obvious to one skilled in the art at the time invention was made to employ a design described by Wall et al in the device by Chrysler et al in order to eliminate creation of a condensate inside the box, and to thermally insulate the heat exchanger. Regarding to the claims 28 and 29: Official notes is taken, that it is well known in the art to cover enclosures with a black paint to accommodate more heat, and to cover them with a moisture impermeable coating to protect from being damaged by liquid drops.

11. Claim 9, 17-18, 32-33, 37, 38-39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cutchaw in view of Solomon.

Cutchaw teaches a computer system, Figs.1-6, comprising a cooling system 11 located inside a computer and comprising: at least a processing unit 16; an individual heat exchanger 14 being in thermal contact with the processing unit 16, wherein said heat exchanger and said processing unit are separately replaceable; a compressor 88; and first and second pipes for transferring a cooling refrigerant from and to the heat exchanger 14 insulated from an ambient air by insulation 58. Cutchaw does not teach said heat exchanger is biased towards the processing unit with a force applied by means of spring members. Cutchaw teaches furthermore said processing unit

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comprising a base plate 30 having legging 24 extending parallel outwards from said base plate, said legging being extending through openings in a socket mounted on a motherboard; and said heat exchanger 14 consists sintered metallic balls 56.

Solomon teaches a computer cryogenic cooling system comprising a heat exchanger 12 biased towards the processing unit 24 with a force applied by means of spring members 16. It would have been obvious to one skilled in the art at the time invention was made to employ a spring biased system as it is shown by Solomon in the device by Cutchaw in order to enhance a heat dissipation and to protect a body of the processing unit. Regarding to the claims 38 and 39: Official notes is taken, that it is well known in the art to cover enclosures with a black paint to accommodate more heat, and to cover them with a moisture impermeable coating to protect from being damaged by liquid drops. Regarding to the claim 40: Official notes is taken, that it is well known in the art to make heat exchangers and refrigerant pipes from copper.

12. Claim 21 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cutchaw and Solomon as applied to claims 9, 17-18, 32-33, 37 above, and further in view of Wall et al.

Cutchaw and Solomon teach all the limitations of the claim except said processing unit and said heat exchanger are enclosed a box having two parts connected together, wherein an insulation material is provided between said box and said heat exchanger, and there is a heating element in contact inside or outside the box, said heating element consisting of resisting wires for a heating inside or outside said



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box. Wall et al teach a cryogenic computer cooling system, Figs. 1-7, comprising a processing unit 42 comprising a base plate 44 having legging 43 extending parallel outwards from said base plate, said legging being extending through openings in a slot 31 mounted on a motherboard; said processing unit and a heat exchanger 56 are enclosed a plastic box comprising a plurality of parts: 50, 47 and 47, wherein an insulation material is provided between said box and said heat exchanger; and there is a heating element 28 in contact inside or outside the box, said heating element consisting of resisting wires for a heating inside said box. It would have been obvious to one skilled in the art at the time invention was made to employ a design described by Wall et al in the device by Chrysler et al in order to eliminate creation of a condensate inside the box, and to thermally insulate the heat exchanger.

***Allowable Subject Matter***

13. Claims 10-15, 19-20, 30 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 16, 25-26 and 35-36 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first and second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: said spring members are attached between the heat exchanger and the socket by fastening means - bolts and nuts (claims 10-16); Compressor is mounted on a frame placed in a disk drive slot on a shaft (claims 24-25 and 34-35); Only heat exchanger is enclosed in an insulating material (claim 19), or in a box (claim 20); and in the vicinity of the heat exchanger the first pipe is located co-axially in the second pipe (claims 30 and 40).

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goth et al (US Patent 6,192,701); Koizumi (US Patent 5,203,390); Beebe et al (US Patent 6,148,635); Scaringe (US Patent 6,205,803); Rohner (US Patent 4,546,619); Hilpert (US Patent 5,706,668); Anderson (US Patent 4,352,274); Lewis et al (US Patent 5,333,460); Tada et al (Japan Patent JP405308197A); Shinda et al (Japan Patent JP406119083A); Ohashi et al (Japan Patent JP404307993A) and Yamamoto et al (Japan Patent JP401236699A).

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Datskovskiy whose telephone number is 306-4535. The examiner can normally be reached on 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (703) 308-4815. The fax phone

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number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

Primary Patent Examiner

Michael Datskovskiy

A handwritten signature in black ink, appearing to read "Michael Datskovskiy", written in a cursive style.

January 14, 2004.